AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Original) An optical fiber having a chromatic dispersion of −100 ps/nm/km or less in a wavelength band of 1535 to 1565 nm,

wherein, over the entire wavelength band except for the shortest and longest wavelengths thereof, a chromatic dispersion profile of the fundamental mode of said optical fiber, defined by an orthogonal coordinate system of wavelength and chromatic dispersion value, has a shape such that the chromatic dispersion values on the chromatic dispersion profile are respectively located on a minus side with respect to the associated chromatic dispersion values on a straight line connecting the chromatic dispersion values at the shortest and longest wavelengths.

2. (Original) An optical fiber according to claim 1, wherein the chromatic dispersion is −200 ps/nm/km or less.

3. (Original) An optical fiber according to claim 1, wherein said optical fiber has a negative dispersion slope over the entire wavelength band.

4. (Original) An optical fiber according to claim 1, wherein the chromatic dispersion has a minimum value at any wavelength in the wavelength band except for the shortest wavelength and longest wavelength.

5. (Original) An optical fiber according to claim 1, wherein said optical fiber has a transmission loss in which the amount of increase is 0.1 dB/km or less at a wavelength of 1550 nm when wound with an inner diameter of 60 mm.

6. (Original) A dispersion compensator comprising:

an optical fiber according to claim 1; and

a housing for accommodating said optical fiber.

7. (Original) A dispersion compensator according to claim 6, wherein said optical fiber is accommodated within said housing in a state in which said optical fiber is wound into a coil form with an inner diameter of 40 to 100 mm.

8. (Original) A dispersion compensator according to claim 6, further comprising a separate optical fiber accommodated in said housing in a state where said separate optical fiber is connected to said optical fiber, said separate optical fiber having a dispersion slope of -0.2 ps/nm^2/km or less at a wavelength of 1550 nm.

9. (Original) A dispersion compensator according to claim 6, further comprising a separate optical fiber accommodated in said housing in a state where said separate optical fiber is connected to said optical fiber, said separate optical fiber having a dispersion slope of -0.5 ps/nm^2/km or less at a wavelength of 1550 nm.

10. (Original) An optical transmission line comprising:

a dispersion compensator according to claim 6; and

a transmission optical fiber connected to said dispersion compensator, said transmission optical fiber having a positive chromatic dispersion in a wavelength band of 1535 to 1610 nm.

11. (Original) An optical fiber having a chromatic dispersion of -100 ps/nm/km or less in a wavelength band of 1565 to 1610 nm,

wherein, over the entire wavelength band except for the shortest and longest wavelengths thereof, a chromatic dispersion profile of the fundamental mode of said optical fiber, defined by an orthogonal coordinate system of wavelength and chromatic dispersion value, has a shape such that the chromatic dispersion values on the chromatic dispersion profile are respectively located on a minus side with respect to the associated chromatic dispersion values on a straight line connecting the chromatic dispersion values at the shortest and longest wavelengths.

12. (Original) An optical fiber according to claim 11, wherein the chromatic dispersion is –200 ps/nm/km or less.

13. (Original) An optical fiber according to claim 11, wherein said optical fiber has a negative dispersion slope over the entire wavelength band.

14. (Original) An optical fiber according to claim 11, wherein the chromatic dispersion has a minimum value at any wavelength in the wavelength band except for the shortest wavelength and longest wavelength.

15. (Original) An optical fiber according to claim 11, wherein said optical fiber has a transmission loss in which the amount of increase is 0.1 dB/km or less at a wavelength of 1550 nm when wound with an inner diameter of 60 mm.

16. (Original) A dispersion compensator comprising:

an optical fiber according to any one of claim 11;

and

a housing for accommodating said optical fiber.

17. (Original) A dispersion compensator according to claim 16, wherein said optical fiber is accommodated within said housing in a state in which said optical fiber is wound into a coil form with an inner diameter of 40 to 100 mm.

18. (Original) A dispersion compensator according to claim 16, further comprising a separate optical fiber accommodated in said housing in a state where said separate optical fiber is connected to said optical fiber, said separate optical fiber having a dispersion slope of –0.2 ps/nm^2/km or less at a wavelength of 1550 nm.

19. (Original) A dispersion compensator according to claim 16, further comprising a separate optical fiber accommodated in said housing in a state where said separate

optical fiber is connected to said optical fiber, said separate optical fiber having a dispersion slope of –0.5 ps/nm^2/km or less at a wavelength of 1550 nm.

20. (Original) An optical transmission line comprising:

a dispersion compensator according to claim 16;

and

a transmission optical fiber connected to said dispersion compensator, said transmission optical fiber having a positive chromatic dispersion in a wavelength band of 1535 to 1610 nm.

21. (Original) An optical fiber having a chromatic dispersion of –100 ps/nm/km or less in a wavelength band of 1554 to 1608 nm,

wherein, over the entire wavelength band except for the shortest and longest wavelengths thereof, a chromatic dispersion profile of the fundamental mode of said optical fiber, defined by an orthogonal coordinate system of wavelength and chromatic dispersion value, has a shape such that the chromatic dispersion values on the chromatic dispersion profile are respectively located on a minus side with respect to the associated chromatic dispersion values on a straight line connecting the chromatic dispersion values at the shortest and longest wavelengths.

22. (Original) An optical fiber according to claim 21, wherein the chromatic dispersion is –200 ps/nm/km or less.

23. (Original) An optical fiber according to claim 21, wherein said optical fiber has a negative dispersion slope over the entire wavelength band.

24. (Original) An optical fiber according to claim 21, wherein the chromatic dispersion has a minimum value at any wavelength in the wavelength band except for the shortest wavelength and longest wavelength.

25. (Original) An optical fiber according to claim 21, wherein said optical fiber has a transmission loss in which the amount of increase is 0.1 dB/km or less at a wavelength of 1550 nm when wound with an inner diameter of 60 mm.

26. (Original) A dispersion compensator comprising:
an optical fiber according to claim 21; and
a housing for accommodating said optical fiber.

27. (Original) A dispersion compensator according to claim 26, wherein said optical fiber is accommodated within said housing in a state in which said optical fiber is wound into a coil form with an inner diameter of 40 to 100 mm.

28. (Original) A dispersion compensator according to claim 26, further comprising a separate optical fiber accommodated in said housing in a state where said separate optical fiber is connected to said optical fiber, said separate optical fiber having a dispersion slope of -0.2 ps/nm^2/km or less at a wavelength of 1550 nm.

29. (Original) A dispersion compensator according to claim 26, further comprising a separate optical fiber accommodated in said housing in a state where said separate optical fiber is connected to said optical fiber, said separate optical fiber having a dispersion slope of -0.5 ps/nm^2/km or less at a wavelength of 1550 nm.

30. (Original) An optical transmission line comprising:
a dispersion compensator according to claim 26;
and
a transmission optical fiber connected to said dispersion compensator, said transmission optical fiber having a positive chromatic dispersion in a wavelength band of 1535 to 1610 nm.

31. (Original) An optical fiber having a chromatic dispersion of -100 ps/nm/km or less in a wavelength band of 1535 to 1610 nm,

wherein, over the entire wavelength band except for the shortest and longest wavelengths thereof, a chromatic dispersion profile of the fundamental mode of said optical fiber, defined by an orthogonal coordinate system of wavelength and chromatic dispersion value, has a shape such that the chromatic dispersion values on said chromatic dispersion profile are respectively located on a minus side with respect to the associated chromatic dispersion values on a straight line connecting the chromatic dispersion values at the shortest and longest wavelengths.

32. (Original) An optical fiber according to claim 31, wherein the chromatic dispersion is –200 ps/nm/km or less.

33. (Original) An optical fiber according to claim 31, wherein said optical fiber has a negative dispersion slope over the entire wavelength band.

34. (Original) An optical fiber according to claim 31, wherein the chromatic dispersion has a minimum value at any wavelength in the wavelength band except for the shortest wavelength and longest wavelength.

35. (Original) An optical fiber according to claim 31, wherein said optical fiber has a transmission loss in which the amount of increase is 0.1 dB/km or less at a wavelength of 1550 nm when wound with an inner diameter of 60 mm.

36. (Original) A dispersion compensator comprising:
an optical fiber according to claim 31; and
a housing for accommodating said optical fiber.

37. (Original) A dispersion compensator according to claim 36, wherein said optical fiber is accommodated within said housing in a state in which said optical fiber is wound into a coil form with an inner diameter of 40 to 100 mm.

38. (Original) A dispersion compensator according to claim 36, further comprising a separate optical fiber accommodated in said housing in a state where said separate optical fiber is connected to said optical fiber, said separate optical fiber having a dispersion slope of –0.2 ps/nm^2/km or less at a wavelength of 1550 nm.

39. (Original) A dispersion compensator according to claim 36, further comprising a separate optical fiber accommodated in said housing in a state where said separate optical fiber is connected to said optical fiber, said separate optical fiber having a dispersion slope of –0.5 ps/nm^2/km or less at a wavelength of 1550 nm.

40. (Original) An optical transmission line comprising:

a dispersion compensator according to claim 36;

and

a transmission optical fiber connected to said dispersion compensator, said transmission optical fiber having a positive chromatic dispersion in a wavelength band of 1535 to 1610 nm.

41. (Original) A dispersion compensator having N optical fibers (N is an integer of 2 or more) that are cascade-connected to each other, said dispersion compensator comprising:

a first optical fiber corresponding to at least one of said N optical fibers, said first optical fiber having a chromatic dispersion of –100 ps/nm/km or less in a used wavelength region which has a band width of 30 nm or more and which is included in a wavelength band of 1535 to 1610 nm, wherein, over the entire wavelength band except for the shortest and longest wavelengths thereof, a chromatic dispersion profile of the fundamental mode of said first optical fiber, defined by an orthogonal coordinate system of wavelength and chromatic dispersion value, has a shape such that the chromatic dispersion values on said chromatic dispersion profile are respectively located on a minus side with respect to the associated chromatic dispersion values on a straight line connecting the chromatic dispersion values at the shortest and longest wavelengths;

and

a second optical fiber which corresponds to at least one of said N optical fibers, wherein, over the entire wavelength band except for the shortest and longest wavelengths thereof, a chromatic dispersion profile of the fundamental mode of said second optical fiber, defined by an orthogonal coordinate system of wavelength and chromatic dispersion value, has a shape such that the chromatic dispersion values on said chromatic dispersion profile are respectively located on a plus side with respect to the associated chromatic dispersion values on a straight line connecting the chromatic dispersion values at the shortest and longest wavelengths;

wherein the absolute value of the RDC defined by the following equation is $10^{-4}/nm^2$ or less, where L_n (km) is the length of the nth optical fiber ($1 \leq n \leq N$) of said N optical fibers, D_n (ps/nm/km) is the dispersion value of the nth optical fiber at a predetermined wavelength in the used wavelength region, and C_n ($ps/nm^3/km$) is the dispersion curvature of the nth optical fiber at the predetermined wavelength.

$$RDC = \frac{\sum_{n=1}^{N} C_n L_n}{\sum_{n=1}^{N} D_n L_n}$$

42. (Original) A dispersion compensator according to claim 41, wherein the chromatic dispersion of said first optical fiber is –200 ps/nm/km or less.

43. (Original) A dispersion compensator according to claim 41, wherein the absolute value of the RDC is $10^{-5}/nm^2$ or less.

44. (Original) A dispersion compensator according to claim 41, wherein the RDS of said dispersion compensator is 0.0032/nm to 0.0038/nm at the predetermined wavelength in the used wavelength region.

45. (Original) A dispersion compensator according to claim 41, wherein the RDS of said dispersion compensator is 0.0068/nm to 0.0082/nm at the predetermined wavelength in the used wavelength region.

46. (Original) A dispersion compensator according to claim 41, wherein the RDS of said dispersion compensator is 0.009/nm to 0.011/nm at the predetermined wavelength in the used wavelength region.

47. (Original) A dispersion compensator according to claim 41, wherein said dispersion compensator has an insertion loss α (dB) of "-0.005 × (total chromatic dispersion (ps/nm/km)) + 1.1" or less at the predetermined wavelength in the used wavelength region.

48. (Currently Amended) An optical transmission line comprising:

a transmission optical fiber for transmitting signal light of a plurality of channels of different wavelengths; and

a dispersion compensator according to ~~claim 45~~ claim 44 for compensating for the chromatic dispersion of said transmission optical fiber;

wherein a difference between the respective RDS values of said transmission optical fiber and said dispersion compensator is 0.0003/nm or less at the predetermined wavelength in the used wavelength region.

49. (Original) An optical transmission line according to claim 48, wherein the absolute value of the total chromatic dispersion throughout the used wavelength region is 0.01 ps/nm/km or less.

50. (Original) An optical communications system for transmitting signal light of a plurality of channels of different wavelengths, said optical communications system including an optical transmission line according to claim 48.

51. (Original) An optical transmission line comprising:

a transmission optical fiber for transmitting signal light of a plurality of channels of different wavelengths; and

a dispersion compensator according to claim 45 for compensating for the chromatic dispersion of said transmission optical fiber;

wherein a difference between the respective RDS values of said transmission optical fiber and said dispersion compensator is 0.0007/nm or less at the predetermined wavelength in the used wavelength region.

52. (Original) An optical transmission line according to claim 51, wherein the absolute value of the total chromatic dispersion throughout the used wavelength region is 0.05 ps/nm/km or less.

53. (Original) An optical communications system for transmitting signal light of a plurality of channels of different wavelengths, said optical communications system including an optical transmission line according to claim 51.

54. (Original) An optical transmission line comprising:

a transmission optical fiber for transmitting signal light of a plurality of channels of different wavelengths; and

a dispersion compensator according to claim 46 for compensating for the chromatic dispersion of said transmission optical fiber;

wherein a difference between the respective RDS values of said transmission optical fiber and said dispersion compensator is 0.001/nm or less at the predetermined wavelength in the used wavelength region.

55. (Original) An optical transmission line according to claim 54, wherein the absolute value of the total chromatic dispersion throughout the used wavelength region is 0.02 ps/nm/km or less.

56. (Original) An optical communications system for transmitting signal light of a plurality of channels of different wavelengths, said optical communications system including an optical transmission line according to claim 54.

57. (Original) An optical transmission line comprising:

a transmission optical fiber having an RDS of 0.0032/nm to 0.0038/nm at a predetermined wavelength in a used wavelength region which has a band width of 30 nm or more and which is included in a wavelength band of 1535 to 1610 nm; and

a dispersion compensator for compensating for the chromatic dispersion of said transmission optical fiber;

wherein a difference between the respective RDS values of said transmission optical fiber and said dispersion compensator is 0.0003/nm or less at the predetermined wavelength, and the absolute value of the total chromatic dispersion in the used wavelength region is 0.01 ps/nm/km or less.

58. (Original) An optical transmission line according to claim 57, wherein the used wavelength region includes a wavelength range of 1535 to 1565 nm.

59. (Original) An optical communications system for transmitting signal light of a plurality of channels of different wavelengths, said optical communications system including an optical transmission line according to claim 57.

60. (Original) An optical transmission line comprising:

a transmission optical fiber having an RDS of 0.0068/nm to 0.0082/nm at a predetermined wavelength in a used wavelength region which has a band width of 30 nm or more and which is included in a wavelength band of 1535 to 1610 nm; and

a dispersion compensator for compensating for the chromatic dispersion of said transmission optical fiber;

wherein a difference between the respective RDS values of said transmission optical fiber and said dispersion compensator is 0.0007/nm or less at the predetermined wavelength, and the absolute value of the total chromatic dispersion in the used wavelength region is 0.05 ps/nm/km or less.

61. (Original) An optical transmission line according to claim 60, wherein the used wavelength region includes a wavelength range of 1535 to 1565 nm.

62. (Original) An optical communications system for transmitting signal light of a plurality of channels of different wavelengths, said optical communications system including an optical transmission line according to claim 60.

63. (Original) An optical transmission line comprising:

a transmission optical fiber having an RDS of 0.009/nm to 0.011/nm at a predetermined wavelength in a used wavelength region which has a band width of 30 nm or more and which is included in a wavelength band of 1535 to 1610 nm; and

a dispersion compensator for compensating for the chromatic dispersion of said transmission optical fiber;

wherein a difference between the respective RDS values of said transmission optical fiber and said dispersion compensator is 0.001/nm or less at the predetermined wavelength, and the absolute value of the total chromatic dispersion in the used wavelength region is 0.019 ps/nm/km or less.

64. (Original) An optical transmission line according to claim 63, wherein the used wavelength region includes a wavelength range of 1535 to 1565 nm.

65. (Original) An optical communications system for transmitting signal light of a plurality of channels of different wavelengths, said optical communications system including an optical transmission line according to claim 63.